

# Regional Methods (RM) Program

## Region 4 FY03-Funded RM Projects

### **Demonstration and Regional Field Testing of Sampling and Analytical Methods for Pesticides and Semi-Volatile Organic Compounds Using an Adsorbent Resin Sampling System, Accelerated Solvent Extraction, and GC/MS Analysis**

**Purpose:** The purpose of this project is to develop simpler and more efficient sampling and extraction methods than the methods currently used in an EPA compendium for ambient air analysis.

**Relevance:** The current technology used to collect and extract samples is a cumbersome and time-consuming process. This project will investigate the possibility of replacing the current technology with a smaller sampler and a more efficient extraction unit, which will reduce the extraction time from 18 hours to 30 minutes.

**Description:** This project involves the design, construction and testing of a sampling assembly, capable of pulling ambient air through a packed Accelerated Solvent Extraction cell. Evaluation of the sampling device will be conducted to determine appropriate extraction and analytical procedures, including assessment of method recovery, accuracy, precision, and limits of detection and quantitation.

**Funding:** The results of the analyses will be shared by ORD and Region 4 and both will provide collaborative use of equipment and supplies critical to co-developing the methods needed for the planned research. No property transfer will be effected under this agreement.

**Anticipated Product:** Deliverables will include a report characterizing the optimized ASE methods and recovery of TO-4A compounds from each sorbent tested, with detailed findings from breakthrough studies; and a report/journal article discussing the comparison between ASE and Soxhlet extraction methods. This project will include writing new compendium methods for inclusion in the EPA "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air" using the new samplers and ASE extraction technique, if they prove feasible.

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